



Safeguards and Security

E2 Consulting Engineers (E2) provides security, safeguards, and nonproliferation technical support services that include:

Nonproliferation and International Security Support

Safeguards and Security – Development of sound safeguards policies, concepts, and approaches. Development of human capital to strengthen international nuclear safeguards to prevent the spread of nuclear weapons.

Nuclear Safeguards Infrastructure Development – Utilize bilateral agreements between DOE and relevant foreign governmental counterpart organizations to help the DOE National Nuclear Security Administration (NNSA) provide education, training, and technical support to establish nuclear infrastructures and analytical capability worldwide that emphasize safeguards, security, and nonproliferation.

Nuclear Verification – Develop a quality control program to test the proficiency of DOE laboratories for analyzing environmental samples used to test compliance with declared nuclear activities.

National Infrastructure and Sustainability – Support cross-cutting issues relating to establishing a sustainable system of measurement methodologies (destructive and nondestructive), reference materials, and measurement equipment for Russian nuclear sites.

Nuclear Material Control and Accounting (MC&A) – Provide subject matter expert (SME) support on a wide range of issues relating to establishing a robust, sustainable MC&A system and assist in the implementation of necessary upgrades



E2's safeguards, national security, and nonproliferation professionals have provided the DOE NNSA's Office of Nonproliferation and International Security (NA-24) with broad technical support in implementing programs under:

- Office of Nuclear Safeguards and Security (NA-241)
- Office of Nuclear Controls (NA-242)
- Office of Nuclear Verification (NA-243)



Specific areas of support to NA-24 have included:

- Development of sound safeguards policies, concepts, and approaches
- Development of human capital through training and education
- Establishment of nuclear infrastructures worldwide, emphasizing safeguards, security, and nonproliferation
- Implementation of confidence building and security measures
- Developing and demonstrating measurement capabilities to international organizations such as the International Atomic Energy Agency (IAEA)

Since 2004, E2's senior SMEs have been instrumental in establishing new bilateral nuclear cooperation agreements between the DOE (through the Office of Nuclear Safeguards and Security) and the governments of Algeria, Kuwait, Libya, Malaysia, Thailand, United Arab Emirates, and Vietnam. E2's SMEs lead official US Government technical delegations to these and other countries with the objective of supporting international and domestic nuclear safeguards by assisting partner states build indigenous capacities in key nuclear infrastructures.



E2 SME Briefing Vietnamese Officials

This effort has helped international partner states to:

- Establish effective nuclear legislation and regulation
- Strengthen their State System of accounting for and control of nuclear material

- Implement the additional protocol to their IAEA safeguards agreements
- Address human resource development needs
- Establish indigenous best practices in safeguards-related fields

E2's SMEs have supported the DOE NNSA's Office of International Material Protection and Cooperation (NA-25) since 2001 by providing program, project, technical, engineering, and construction management support for multiple international sites through the Material Protection, Control, and Accountability program.



Russian Mass Spectrometer

E2's SMEs are in constant demand and are routinely deployed to validate the Russian Nuclear Security efforts and to ensure nuclear non-proliferation efforts are well supported. This support includes:

- Development of measurement methodologies
- Evaluation of measurement equipment
- Development of reference materials
- Marking of accountable items with machine readable codes
- Performance testing
- Configuration management
- Equipment maintenance
- Testing and implementation of tamper indicating devices
- Sustainability
- Site specific problems